UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 10 West 15th St., Suite 3200
HELENA, MONTANA 59626

Ref: 8MO

November 1, 2007

Gallatin National Forest
Attn: Jim Devitt –Re: BMW Fuels Reduction
10 East Babcock Street
P.O. Box 130
Bozeman, MT 59771

Re: CEQ 20070392; Bozeman Municipal Watershed Fuels Project Draft Environmental Impact Statement

Dear Mr. Devitt:

The Environmental Protection Agency (EPA) Region VIII Montana Office has reviewed the Draft Environmental Impact Statement (DEIS) for the Bozeman Municipal Watershed Fuels Project. The EPA reviews EIS's in accordance with its responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts of any major federal agency action. EPA's comments include a rating of both the environmental impact of the proposed action and the adequacy of the NEPA document.

The EPA is supportive of the project purpose and need to reduce hazardous fuels and fire risk/severity both in the Bozeman municipal watershed and in the wildland urban interface (WUI), and increase firefighter and public safety in the event of a wildfire. We agree with the statement in the DEIS stating that, *"major rainfall or runoff events following a wildfire could result in heavy sediment loads that would exceed the capacity of the city's water treatment plant,"* which could *"result in a critical shortfall in the local water supply."* The DEIS also states that, *"a major wildfire within the municipal watershed would pose significant danger to both firefighters and the recreating public due to limited road access in these areas."*

The EPA recognizes that land management decisions involve environmental and resource management trade-offs (i.e., trade-offs in impacts among vegetation treatments, fire and fuels, water quality and aquatics, wildlife, and other resource impacts). Accordingly, we consider fuels reduction in the Bozeman municipal watershed and in the WUI to be a prudent course of action. Proposed actions should reduce risk of sediment and ash reaching the municipal water treatment facility during or after a severe wildfire. Water quality impacts from a severe wildfire could be much worse than impacts from fuel reduction treatments.

Sediment production and transport from proposed logging, road building and prescribed fire, however, does have potential to affect sediment and turbidity and nutrient levels in the Bozeman municipal watershed. The Source Water Delineation & Assessment Report for the Bozeman water supply indicates that the surface water intakes on Sourdough (Bozeman) Creek and Hyalite Creek have "high sensitivity" to contamination. It is important, therefore, that the trade-offs between sediment production/transport and other potential impacts to fisheries, wildlife and other resources associated with logging, road building, and prescribed burning be carefully evaluated in relation to the purpose and need and the significant issues in an effort to minimize overall adverse effects and optimize the trade-offs. The proposed fuels reduction treatments must be planned, designed and implemented so that they do not unduly impact the watershed, water supply, fisheries, wildlife or other resources (i.e., minimize ground disturbance to minimize sediment production and delivery to streams in the municipal watershed, and include appropriate mitigation measures to reduce adverse impacts to other resources).

Sediment modeling indicates that Alternative 3 would cause sediment levels that are very close to the sediment standard for Hyalite Creek and would cause standard exceedances in Leverich Creek, which contains native westslope cutthroat trout. Alternative 3 would also pose the highest potential for turbidity increases at the Bozeman Water Treatment Plant, and Alternatives 2 and 3 are not consistent with rules and policies for population viability of fisheries in Leverich Creek, and would not meet the intent of the Memorandum of Understanding and Conservation Agreement for Westslope Cutthroat Trout, MOUCA. The EPA would object to exceedances in Montana Water Quality Standards (i.e., for sediment) with Alternative 3, and be very concerned about adverse impacts to fisheries in Leverich Creek with Alternatives 2 and 3.

The preferred alternative, Alternative 5, appears to more effectively mitigate the sediment effects from fuel treatment and road building activities, and is stated to be in compliance with sediment standards, and would meet the intent of MOUCA. We are pleased that many treatment units in Alternative 5 would be harvested using less disturbing skyline cable or helicopter logging methods (447 acres skyline logging, 2487 acres of helicopter logging); and the preferred alternative includes reductions in road construction in comparison to Alternatives 2 and 3 (6.7 miles less temporary road than Alternative 3); and many additional mitigation measures to reduce adverse effects to wildlife and other resources. We note that Alternative 4 would likely have the least potential for sediment production and transport, but Alternative 4 appears to be less effective in reducing fire risk and severity, and thus, protecting the municipal watershed, and public and firefighter safety. Accordingly, we concur with the Gallatin National Forest's identification of Alternative 5 as the preferred alternative.

We note that 774 acres of tractor logging, which causes more soil disturbance and water quality risk, is proposed with the preferred alternative. It will be important that adequate mitigation measures that reduce erosion and effectively protect soils and avoid sediment production and transport are used when carrying out tractor logging activities in a municipal watershed. We are pleased that some logging operations in Leverich Creek drainage will be delayed to allow for recovery of sediment levels, and units 25 and 26 in the Leverich Creek

drainage would be logged over snow or frozen ground to limit soil disturbance, and greater riparian buffers would be used in the Leverich Creek drainage. We have some recommendations for additional measures during tractor logging to further mitigate soils impacts that you may want to consider (see our enclosed detailed comments for specific suggestions).

We also believe that some level of water quality or aquatic monitoring should be carried out in the Bozeman and Hyalite Creek watersheds to document that water quality will not be degraded during logging, road building, and burning. Given the sensitive nature of the municipal watershed and the requirement that there be no change from naturally occurring turbidity and no increases above naturally occurring sediment concentrations, some level of water quality monitoring is recommended to validate that such requirements are met. We suggest prioritizing drainages with greater potential for water quality impacts for aquatic monitoring (e.g., drainages with higher road density, new road construction, tractor logging, etc.).

We are pleased that consultations with the City of Bozeman and local watershed groups are taking place, and encourage your consultation with the MDEQ drinking water program staff. It is important that the Gallatin National Forest develop plans for fuel reduction treatments and road building activities and monitoring in the municipal watershed in close cooperation with the City of Bozeman and the Montana DEQ.

We also want to emphasize that roads are often the greatest sediment source within managed forest basins. Sediment from roads, particularly poorly maintained roads with inadequate road drainage is a major cause of adverse water quality impacts in forests. While we are pleased that efforts appear to have been made to minimize construction of new roads with the preferred alternative, and some road improvements in the Leverich Creek drainage are proposed, we note that 6.9 miles of temporary road construction and reopening of 1.7 miles of roads are included in the preferred alternative. It is not clear to us if the new temporary roads include new road-stream crossings. Further information on the location and potential effects of the temporary and reopened roads should be provided in the FEIS.

Construction of roads, even temporary roads, is one of the more significant aspects of a project in terms of environmental effects, since road construction greatly increases the possibility of erosion and sediment transport from erosion of road surfaces and cut and fill slopes. It will be important to properly plan, design and locate roads to minimize adverse water quality effects, and to adequately maintain new temporary and existing roads in the municipal watershed, since this is critical to protecting water quality. Reducing proximity of roads to streams and minimizing road stream crossings are critical to reducing impacts of roads to water quality and aquatic habitat.

We also did not see much information regarding the conditions of existing roads and adequacy of road maintenance in the project area. We are concerned about the large road maintenance backlog on National Forests and the many miles of Forest roads in need of maintenance contributing to water quality impacts due to reduced road maintenance budgets.

We are concerned that some roads may be left in a state of disrepair with aggravated water quality and fisheries impacts. We are also concerned that road decommissioning in the 303(d) listed Hyalite Creek waters is dependent on limited funding, and cannot be carried out a timely basis due to inadequate funding. Additional information on road conditions in the Bozeman Municipal Watershed project area (i.e., road drainage, erosion, sediment production and transport), and the Gallatin NF's ability to adequately maintain roads and improve degraded road conditions and decommission roads in the municipal watershed should be provided in the FEIS.

The EPA's more detailed questions, comments, and concerns regarding the analysis, documentation, or potential environmental impacts of the Bozeman Municipal Watershed Fuels Project DEIS are included in the enclosure with this letter. Based on the procedures EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action and alternatives in an EIS, the Bozeman Municipal Watershed Fuels Project DEIS has been rated as Category EC-2 (Environmental Concerns - Insufficient Information). A summary of EPA's DEIS rating criteria is attached.

In summary, the EPA has some environmental concerns regarding potential effects to water quality and other resources, although we recognize that water quality impacts from a severe wildfire could be much worse than effects from proposed fuel reduction treatments, and we recognize that protection of a major municipal water supply from adverse effects of a large scale wildfire, and protection of public and firefighter safety need to be prioritized. EPA concurs with the Gallatin National Forest's identification of Alternative 5 as the preferred alternative, but we have requested additional information, and have provided some suggestions for additional mitigation measures and monitoring for your consideration in order to more fully mitigate potential impacts of the proposed management actions.

If you have any questions you may contact Mr. Steve Potts of my staff in Helena at (406) 447-5022 or in Missoula at (406) 329-3313, or via e-mail at potts.stephen@epa.gov . Thank you for your willingness to consider our comments at this stage of the process, and we hope they will be useful to you.

Sincerely,

/s/ John F. Wardell
Director
Montana Office

Enclosures
cc: Larry Svoboda/Julia Johnson, EPA, 8EPR-N, Denver
Mark Kelley/Robert Ray, MDEQ, Helena

EPA Comments on the Draft EIS for the Bozeman Municipal Watershed Fuels Project on the Gallatin National Forest

Brief Project Overview:

The Gallatin National Forest prepared this DEIS to evaluate alternatives for reducing the potential for severe and extensive fire in the Municipal Watershed for the City of Bozeman which includes the lower portions of the Bozeman Creek and Hyalite Creek drainages. Fuel reduction is proposed through a combination of thinning and controlled burns on about 5000 acres. The four main objectives of the project are to: 1) Implement vegetation management activities to begin reducing the severity and extent of wildfire in the watershed; 2) Focus activities to reduce the risk of sediment and ash reaching the municipal water treatment facility in the event of a severe wildland fire; 3) Provide for firefighter and public safety by beginning to modify potential fire behavior; and 4) Manage fuels in the wildland/urban interface to reduce the potential for spread of wildfire between the national forest and adjacent private lands. Five alternatives were evaluated.

Alternative 1 is the No Action alternative, under which current management plans with no fuel reduction activities would guide management of the project area. The No Action alternative provides a baseline for comparison of the environmental effects of the other alternatives.

Alternative 2 is the proposed action that was developed to meet the purpose and need, and includes burning of approximately 850 acres in less dense timber stands; mechanical cutting and piling of small trees on 1,150 acres; partial harvesting on about 2,220 acres, with 23% ground based, 32% skyline, and 45% helicopter harvesting. This Alternative would require a project-specific Forest plan amendment to exempt the proposed fuel reduction treatment from meeting the Forest Plan visual quality objective (VQO) on the Gallatin Face (FP, pg. II-16) in units 12, 13, 22. Approximately 7.2 miles of temporary harvest road would be constructed and 3 miles of old road reopened. Approximately 400 acres of the partial harvesting would occur in the Gallatin Fringe Inventoried Roadless Area (IRA) by helicopter, with no roads built in the IRA. The approximate duration of the proposed activities would be a 5-12 year timeframe.

Alternative 3 is the proposed action that was developed to meet the purpose and need with more aggressive fuel treatments, and includes burning of approximately 1,100 acres in less dense timber stands; mechanical cutting and piling of small trees on 1,150 acres; partial harvesting on about 3,900 acres, with 19% ground based, 31% skyline, 46% helicopter and 4% helicopter/cable harvesting. This Alternative would require a project-specific Forest plan amendment to exempt the proposed fuel reduction treatment from meeting the Forest Plan VQO on the Gallatin Face in units 12, 13, 14, 15, 20, 22, 27, 28, 29, 30. Approximately 13.5 miles of temporary harvest road would be constructed and 5.4 miles of old road reopened. Approximately 675 acres of the partial harvesting would occur in the Gallatin Fringe Inventoried Roadless Area (IRA) by helicopter, with no roads built in the IRA. The approximate duration of the proposed activities would be a 5-12 year timeframe.

Alternative 4 is the no logging alternative, where fuel reductions would be achieved with prescribed burning, small tree removal and no road building. Alternative 4 includes burning of approximately 3,850 acres in less dense timber stands; mechanical cutting and piling of small trees on 1,250 acres; This Alternative is consistent with Forest Plan VQO standards. Prescribed burning would occur in the Gallatin Fringe Inventoried Roadless Area (IRA), but there would be no harvest in the IRA. The approximate duration of the proposed activities would be a 5-12 year timeframe.

Alternative 5 was designed to improve the effectiveness of the project toward meeting the purpose and need for action while mitigating unacceptable impacts to scenery, watershed, and westslope cut throat trout. Design of this alternative also incorporates treatment areas in and near the wildland urban interface that were unintentionally left out of other alternatives or after additional analysis areas were determined to be strategically important to treat with respect to fire spread. Additionally this alternative makes revisions in treatment prescription and/or method where more accurate information enabled specialists to make more accurate treatment recommendations. Alternative 5 includes burning of approximately 950 acres in less dense timber stands; mechanical cutting and piling of small trees on 1,200 acres; partial harvesting on about 3,700 acres, with 21% ground based, 12% skyline, 67% helicopter harvesting. This Alternative is consistent with the Forest Plan VQO standard, however, a Forest plan amendment would be required to change the VQO on the Gallatin Face from Partial retention to Rehabilitation for the east side of units 13, and the northwest edge of unit 25. Approximately 6.9 miles of temporary harvest road would be constructed and 1.7 miles of old road reopened. Approximately 600 acres of the partial harvesting would occur in the Gallatin Fringe Inventoried Roadless Area (IRA) by helicopter, with no roads built in the IRA. The approximate duration of the proposed activities would be a 5-12 year timeframe. Alternative 5 is the preferred alternative.

Comments:

1. We appreciate the inclusion of clear narrative descriptions with maps describing alternatives (Figure 1-1, Figures 2-1 through 2-4); as well identification of mitigation measures and description of design features common to all action alternatives (page 2-10 to 2-21); and tables describing and comparing important features of alternatives in Chapters 2 (Tables 2-1 through 2-4). The alternatives descriptions and tables promote improved project understanding, and assist in evaluation of alternatives and help provide a clearer basis of choice among options for the decisionmaker and the public in accordance with the goals of NEPA. We especially appreciate the identification and discussion of design features and mitigation measures proposed to mitigate adverse impacts.

   It would be helpful, however, if the maps were larger and identified specific treatment units, and more clearly showed road locations relative to surface waters, as well as boundaries for the Bozeman municipal watershed and the water supply diversion locations. We also suggest that the volumes of timber to be harvested with each alternative be included in the alternatives descriptions in Chapter 2. We consider timber harvest volume to be important information pertinent to understanding alternatives, and while this information is found in Chapter 3 (Issue

#10, Economics) we recommend that it also be included in the alternatives descriptions in Chapter 2.

2. We appreciate the inclusion of a summary of public involvement efforts, including the discussion of efforts to collaborate with the City of Bozeman and the Bozeman Watershed Council in regard to proposed activities within the Bozeman Creek and Hyalite Creek municipal watershed areas (pages 1-16, 1-17).

3. The 1987 Forest Plan for the Gallatin National Forest is referenced in many places in the DEIS, often including specific references to sections and page numbers in the Plan (e.g. page 2-2, 3-233). We could not find the Forest Plan available on the Internet and it may be difficult for the public to obtain. If the Gallatin NF considers specific requirements of the Forest Plan to be germane to the proposed action, we suggest adding brief excerpts from the Plan as sidebars in the FEIS, or in the very least identifying where one can access the 1987 Forest Plan.

Water Quality/Aquatics

4. Thank you for providing DEIS discussion regarding wildfire risks to the Bozeman municipal water supply and treatment system per the Bozeman Source Water Protection Plan (page 3-31), including disclosures regarding treatment plant difficulties in treating waters with turbidity levels above 20 NTU (page 3-33). It is known that high sediment loads and high turbidity can occur in watersheds following wildfires. We give great consideration to the statement in the DEIS (page 1-2):

> *"Major rainfall or runoff events following a wildfire could result in heavy sediment loads that would exceed the capacity of the city's water treatment plant. Under such conditions, which could last from days to weeks and persist for several years following a major fire event, the city could be incapable of meeting water demand, resulting in a critical shortfall of the local water supply. Another conclusion of the Forest Service assessment was that a major wildfire within the municipal watershed would pose significant danger to both firefighters and the recreating public due to limited road access in these areas."*

Accordingly, we support the need to conduct fuel reduction activities in the Bozeman and Hyalite Creek municipal watershed for the City of Bozeman to reduce fire risk and the magnitude of potential adverse impacts to Bozeman's water supply and water treatment system should a wildfire occur. As you know Hyalite Creek is classified A-1, and Bozeman (Sourdough) Creek is classified A-Closed in accordance with Montana Water Quality Standards (ARM 17.30.621). A-Closed watersheds are particularly sensitive and have to be protected so waters can be maintained for drinking, culinary, and food processing purposes after simple disinfection (i.e., no filtration). Public access and activities such as timber harvest (and livestock grazing) must be controlled by the water utility owner under conditions prescribed by the Montana DEQ. Allowable water quality changes in A-Closed watersheds are very limited. No change is allowed from naturally occurring turbidity or dissolved oxygen or temperature, and no increases are allowed above naturally occurring concentrations of sediment, suspended sediment, settleable solids, oils or floating solids which are likely to create a nuisance or render the waters

harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish or other wildlife.

Logging and road building and prescribed fire in the Bozeman and Hyalite Creek watersheds is likely to result in sediment production and transport, although we recognize that water quality impacts from a severe wildfire could be much worse than effects from proposed fuel reduction treatments. The EPA considers fuels reduction in the municipal watershed and in the wildland urban interface to be a prudent course of action.

It is important, however, that fuels reduction treatments be planned, designed and implemented so that they do not unduly impact the watershed, water supply, fisheries, wildlife or other resources. Fuels must be removed without degrading water quality from logging, road building, road use, road maintenance, and post-project road obliteration. The Source Water Delineation & Assessment Report for the City of Bozeman water supply (http://www.deq.mt.gov/ppa/swp/nrisreports/MT0000161.htm#_Toc505057216) indicates that the surface water intakes on Sourdough (Bozeman) Creek and Hyalite Creek are exposed at the land surface and are vulnerable to contamination, and are classified as "High Sensitivity" to contamination. Sediment production and transport from logging and road building and prescribed fire has the potential to affect sediment and turbidity and nutrient levels in surface waters and the municipal water supply. There is always some concern regarding sediment production in a municipal watershed, since the A-1 and A-Closed classification for waters in these watersheds require "no change from naturally occurring turbidity" and "no increases above naturally occurring concentrations of sediment."

It will also be important for the Forest Service to develop plans for fuel reduction treatments and road building activities in the municipal watershed in close cooperation with the City of Bozeman and Montana DEQ water supply program. We are pleased that consultations with the City of Bozeman and local watershed groups are taking place (page 1-16).

5. The DEIS discloses the results of R1R4 sediment modeling with the alternatives, and states that Alternative 3 would cause sediment levels that are very close to the sediment standard for Hyalite Creek and would cause sediment exceedances in Leverich Creek (page 3-41). Alternative 3 would pose the highest potential for turbidity increases at the Bozeman Water Treatment Plan (page 3-40). The DEIS also states that Alternatives 2 and 3 are not consistent with rules and policies for population viability of fisheries in Leverich Creek, and would not meet the intent of the Memorandum of Understanding and Conservation Agreement for Westslope Cutthroat Trout, MOUCA, (pages 3-64, 3-67). We would be very concerned about the exceedances in Montana Water Quality Standards for sediment with Alternative 3, and about potential fisheries impacts to Leverich Creek and failure to meet MOUCA with Alternatives 2 and 3.

We are pleased that the preferred alternative, Alternative 5, with its reduced road construction and additional mitigation measures, is stated to be in compliance with sediment standards, and would protect the population of native westslope cutthroat trout in Leverich Creek and would meet the intent of MOUCA (page 3-74). Alternative 5 mitigates the sediment effects from fuel treatment and road building activities better than Alternatives 2 and 3. We note that Alternative

4 would likely have the least potential for sediment production and transport, but it appears that Alternative 4 is also less effective in reducing fire risk/severity and protecting the municipal watershed, and public and firefighter safety (Table 1-4, page 3-25). Accordingly we support the Gallatin NF's identification of Alternative 5 as the preferred alternative.

6. The DEIS indicates that segments of Hyalite Creek and Bozeman (Sourdough) Creek are listed by the Montana DEQ as water quality impaired under Section 303(d) of the Clean Water Act (pages 3-28, 3-30). It appears that the 303(d) listed segments on Hyalite Creek are located both on and off the Forest, and that the listed segment of Bozeman (Sourdough) Creek is downstream from the Forest. As you know, the Montana Dept. of Environmental Quality (MDEQ) and EPA are under a Court Ordered schedule to prepare TMDLs for 303(d) listed surface waters. The Lower Gallatin TMDL (which includes Hyalite Creek) and the East Gallatin TMDL (Bozeman Creek) are due 2009 to 2012. Pending completion of a TMDL in Montana, new and expanded nonpoint source activities may commence and continue, provided those activities are conducted in accordance with (MCA 75-5-703). The Administrative Rules of Montana (17.30.602) define these as "methods, measures, or practices that protect present and reasonably anticipated beneficial uses."

   "Reasonable soil, land and water conservation practices" include but are not limited to structural and nonstructural controls and operation and maintenance procedures. Appropriate practices may be applied before, during, or after pollution producing activities. It is important to note that "reasonable soil, land and water conservation practices" are differentiated from BMPs, which are generally established practices for controlling nonpoint source pollution. BMPs are largely practices that provide a degree of protection for water quality, but may or may not be sufficient to achieve Water Quality Standards and protect beneficial uses. "Reasonable soil, land and water conservation practices" include BMPs, but may require additional conservation practices, beyond BMPs to achieve Water Quality Standards and restore beneficial uses.

   It is EPA's policy that proposed activities in the drainages of 303(d) listed streams should not cause further degradation of water quality, and should be consistent with the State's TMDLs and water quality plans. Such consistency means that if pollutants may be generated during project activities, mitigation or restoration activities should also be included to reduce existing sources of pollution to offset or compensate for pollutants generated during project activities in accordance with the TMDL and long-term restoration plan. Recognizing uncertainties and desiring a margin of safety, such compensation should more than offset pollutants generated, resulting in overall reductions in pollution consistent with long-term water quality improvement and restoration of support of beneficial uses. Watershed restoration activities that compensate for pollutant production during management activities in watersheds of 303(d) listed streams should also be implemented within a reasonable period of time in relation to pollutant producing activities (e.g., 5 years). The DEIS notes that 10-15 miles of roads will be decommissioned in the Hyalite Creek watershed over the next 10-15 years as funds become available (page 3-28), and watershed/road improvements in the Leverich Creek drainage. We are concerned, however, about the limited funding available to implement such road related watershed restoration work.

It is important that the project be consistent with the TMDLs and Water Quality Plans being prepared by the State for impaired waters. The Gallatin National Forest should coordinate their proposed activities with Montana DEQ TMDL program staff to assure consistency of proposed activities with the State's TMDL development (contact MDEQ staff such as Mr. Mark Kelley at 406-444-3508, or Mr. Robert Ray at 406-444-5319, or Mr. Ron Steg of EPA at 406-457-5024).

7. Thank you for identifying and discussing BMPs that will be used to protect soil productivity, sensitive soils, and water quality (Appendix B). We generally recommend avoidance of ground based timber harvest and road construction in areas with high risk of sediment production or erosion potential and areas highly susceptible to mass failure. We encourage use of harvest/yarding methods that reduce ground disturbance and sediment production and transport risks when harvesting timber on erosive soils or steep slopes to reduce adverse effects to soil and water quality. As you know, summer tractor harvests have greater potential to cause sediment production/transport.

We are pleased that many treatment units in the preferred alternative, Alternative 5, will be harvested using less disturbing skyline cable or helicopter logging methods (447 acres skyline logging, 2487 acres of helicopter logging, as well as 774 acres of tractor logging, Appendix A); and includes reductions in road construction in comparison to Alternatives 2 and 3 (6.7 miles less temporary road than Alternative 3); and includes some additional mitigation measures (i.e., slash filter windrow on temporary road B-50, delaying some logging operations in Leverich Creek drainage to allow for recovery of sediment levels, reductions in ground disturbance and increased helicopter yarding,units 25 and 26 in the Leverich Creek drainage would be logged over snow or frozen ground to limit soil disturbance, and greater riparian buffers in the Leverich Creek drainage, pages 2-10, 2-11).

Recontouring and seeding of skid trails to reduce erosion, infiltration, and restore soils mentioned in the DEIS (page 2-18), but we recommend consideration of additional measures during summer tractor logging to further mitigate soils impacts, including use of historic skid trails where feasible, placing restrictions on skidding with tracked machinery in sensitive areas, using slash mats to protect soils, constructing water bars, creating brush sediment traps, adding slash to skid trail surfaces after recontouring and ripping and assuring that adequate coarse woody debris is left on-site (for soil protection and nutrient recycling), and seeding/planting of forbs, grasses or shrubs to reduce soil erosion and hasten recovery, as well as recontouring, slashing and seeding of temporary roads and log landing areas following use. It is important that mitigation measures effectively protect soils and avoid sediment production and transport when carrying out logging activities in a municipal watershed.

8. Thank you for providing good discussions regarding analysis of impacts to soils in the project area (Issue #13, pages 3-261 to 3-284). We are pleased that all alternatives will meet the Regional 15% detrimental soil disturbance standard with no more than 15% detrimental soil disturbance allowed in any unit; and that soil productivity monitoring will be undertaken on all ground based harvest units (page 2-18), to assure that the soil quality thresholds are not exceeded. We are also pleased that the DEIS indicates that Forest Plan coarse woody debris requireent (15 tons per acre) will be met with Alternative 5, and that additional woody debris

will occur as snags fall to the ground and needles and fine branches retained on the ground will maintain soil productivity (page 3-207).

9. We note that the DEIS states that the proposed 6.9 miles of temporary roads with Alternative 5 will disturb 34 acres, but that only 21 of these 34 acres of temporary roads are to be restored (page 3-270). It is not clear to us why all 34 acres of temporary roads will not be restored? We believe all temporary roads should be obliterated following completion of the project, and with such road areas ripped and seeded and with placement of woody debris.

10. We are pleased that efforts appear to have been made to minimize construction of new roads. The preferred alternative has a net reduction of 6.7 miles of proposed temporary roads in comparison to Alternative 3 (page 2-10), and includes some road improvements in the Leverich Creek drainage. Roads are often the greatest sediment source within managed forest basins. Sediment from roads, particularly poorly maintained roads with inadequate road drainage is a major cause of adverse water quality impacts in forests. EPA fully supports road maintenance and BMP and drainage improvements to forest roads, since these are critical to protecting aquatic health.

We are concerned about the large road maintenance backlog on National Forests and the many miles of Forest roads in need of maintenance contributing to water quality impacts that may not be maintained due to reduced road maintenance budgets and the difficulties and delays associated with developing adequate amounts of commercial timber harvest projects as an alternate source of funding. We are concerned that many roads may be left in a state of worsening disrepair with aggravated water quality and fisheries impacts and delays in water quality restoration. Additional information on road conditions in the Bozeman Municipal Watershed project area (i.e., road drainage, erosion, sediment production and transport), and the Gallatin NF's ability to adequately maintain roads and improve degraded road conditions in the area should be provided in the FEIS.

We have concerns about reductions in Forest Service road maintenance budgets that make it difficult to carry out needed road maintenance work to reduce road sediment production and transport to surface waters. We note that the longer roads are neglected and not properly maintained, the more significant adverse effects will become, and the more costly it will be to eventually restore roads to non-polluting conditions.

EPA very much supports conduct of road maintenance and improvement activities on existing roads such as graveling roads near stream crossings, improving cross-drains, installing dips, replacing undersized culverts, decommissioning roads, etc.. We also support road decommissioning and reductions in road density, since increasing road density, especially road stream crossing density, has been inversely correlated with aquatic health in many areas. Lower road densities are often associated with improved trout habitat, as well as improved wildlife habitat and security.

We also note that there is also is often a relationship between higher road density and increased forest use and increased human caused fire occurrences. Reduction in road density, therefore,

may also reduce risks of human caused fires, which could be important in an area with high fuels/fire risk and/or WUI issues such as the Bozeman and Hyalite Creek area.

11. While efforts have been made to reduce road construction, the preferred alternative still proposes 6.9 miles of new temporary roads and reopening of 1.7 miles of old road. Construction of roads, even temporary roads, is one of the more significant aspects of a project in terms of environmental effects, even temporary roads, since road construction greatly increases the possibility of erosion and sediment transport from erosion of road surfaces and cut and fill slopes. Also, it is not clear if any new road-stream crossings would be created with the 6.9 miles of new temporary roads and reopening of 1.7 miles of old road. Information on road stream crossings should be provided in the FEIS. Reducing proximity of roads to streams and minimizing road stream crossings are critical to reducing impacts of roads to water quality and aquatic habitat.

For your information and consideration, EPA's general recommendations regarding road construction are:

* minimize road construction and reduce road density as much as possible to reduce potential adverse effects to watersheds;
* locate roads away from streams and riparian areas as much as possible;
* locate roads away from steep slopes or erosive soils;
* minimize the number of road stream crossings;
* stabilize cut and fill slopes;
* provide for adequate road drainage and control of surface erosion with measures such as adequate numbers of waterbars, maintaining crowns on roads, adequate numbers of rolling dips and ditch relief culverts to promote drainage off roads avoid drainage or along roads and avoid interception and routing sediment to streams;
* consider road effects on stream structure and seasonal and spawning habitats;
* allow for adequate large woody debris recruitment to streams and riparian buffers near streams.
* properly size culverts to handle flood events, pass bedload and woody debris, and reduce potential for washout.
*properly align culverts with the stream channel, and design and place culverts to allow for fish migration.
* replace undersized culverts and adjust culverts which are not properly aligned or which present fish passage problems and/or serve as barriers to fish migration.
* use bridges or open bottom culverts that simulate stream grade and substrate and that provide adequate capacity for flood flows, bedload and woody debris where needed to minimize adverse fisheries effects of road stream crossings.

We encourage conduct of inspections and evaluations to identify conditions on roads and other anthropogenic sediment sources in the watersheds in the project area that may cause or contribute to sediment delivery and stream impairment, and to include activities in the project to correct as many of these conditions and sources as possible.

Blading of unpaved roads in a manner that contributes to road erosion and sediment transport to streams and wetlands should be avoided. It is important that management direction assures that road maintenance (e.g., blading) be focused on reducing road surface erosion and sediment delivery from roads to area streams. Practices of expediently sidecasting graded material over the shoulder and widening shoulders and snow plowing can have an adverse effects upon streams, wetlands, and riparian areas that are adjacent to roads. Road use during spring breakup conditions should also be avoided. Snow plowing of roads later in winter for log haul should also be avoided to limit runoff created road ruts during late winter thaws that increase road erosion (i.e., ruts channel road runoff along roads).

For your information Forest Service Region 1 provides training for operators of road graders regarding conduct of road maintenance in a manner that protects streams and wetlands, (i.e., Gravel Roads Back to the Basics). If there are road maintenance needs on unpaved roads adjacent to streams and wetlands we encourage utilization of such training (contact Donna Sheehy, FS R1 Transportation Management Engineer, at 406-329-3312).

We also note that there are training videos available from the Forest Service San Dimas Technology and Development Center for use by the Forest Service and its contractors (e..g, "Forest Roads and the Environment"-an overview of how maintenance can affect watershed condition and fish habitat; "Reading the Traveled Way" -how road conditions create problems and how to identify effective treatments; "Reading Beyond the Traveled Way"-explains considerations of roads vs. natural landscape functions and how to design maintenance to minimize road impacts; "Smoothing and Reshaping the Traveled Way"-step by step process for smoothing and reshaping a road while maintaining crowns and other road slopes; and "Maintaining the Ditch and Surface Cross Drains"-instructions for constructing and maintaining ditches, culverts and surface cross drains).

12. We are pleased that Equivalent Clearcut Acre (ECA) analysis predicts that water yield effects of the preferred alternative would be low and below a measurable threshold, (page 3-46), so that stream channel stability should not be threatened in area streams.

13. It is stated that livestock grazing occurs in the Bozeman Municipal Watershed area on the Hyalite Canyon allotment (page 3-29, 382 AUMs) We note that grazing can result in fecal coliform and total coliform contamination of nearby waters and/or could cause concerns regarding cryptosporidium, although we are pleased that it is stated that riparian fencing is used. Is the grazing allotment adequately managed and monitored to be consistent with the A-1 and A-Closed Water Quality Standards classifications for the Hyalite and Bozeman Creek public water sources for the City of Bozeman?

14. The DEIS states (page 2-19) that a no-burn buffer of at least 50 feet adjacent to Bozeman and Hyalite Creeks and perennial tributaries will be retained, and that Montana SMZ rules will be followed. We note that INFISH riparian harvest conservation areas (RHCAs) are much more protective of water quality and riparian and wetland areas than the Montana SMZ rules. Adequate RHCAs are important to maintain the health of watersheds, riparian, and aquatic resources and sustain aquatic and terrestrial species and provide water of sufficient quality and

quantity to support beneficial uses. Wherever possible we recommend use of more protective INFISH RHCAs since they more effectively promote:

* maintenance of the physical integrity of aquatic ecosystems;
* amounts and distribution of woody debris sufficient to sustain physical and biological complexity;
* adequate canopy cover for summer and winter thermal regulation;
* appropriate amounts and distributions of source habitats for riparian or wetland dependent species;
* maintenance of water quality and hydrologic processes; and maintenance of naturally functioning riparian vegetation communities.

15. We consider the protection, improvement, and restoration of wetlands to be a high priority. Wetlands increase landscape and species diversity, and are critical to the protection of designated water uses. Executive Order 11990 requires that all Federal Agencies protect wetlands. In addition national wetlands policy has established an interim goal of **No Overall Net Loss of the Nation's remaining wetlands**, and a long-term goal of increasing quantity and quality of the Nation's wetlands resource base. Wetland impacts should be avoided, and then minimized, to the maximum extent practicable, and then unavoidable impacts should be compensated for through wetland restoration, creation, or enhancement.

    The DEIS states that Hyalite, Bozeman, Leverich, Hodgeman, and Cottonwood Creeks watersheds in the project area are well drained with only a few localized wetlands, and that these areas will be avoided in any ground disturbing activities in the project (page 3-29). We are pleased that wetlands would be avoided. We recommend that treatment units be reviewed in the field to assure identification of wetlands, and marking of wetland locations on the Sale Area Map and in the field so that timber contractors will be able to avoid wetlands. We support use of buffers around wetlands and BMPs that are protective of wetlands such as no heavy equipment operation in wetlands.

Monitoring

16. We believe monitoring should be an integral part of any management decision. The EPA endorses the concept of adaptive management whereby effects of implementation activities are determined through monitoring (i.e., ecological and environmental effects). It is through the iterative process of setting goals and objectives, planning and carrying out projects, monitoring impacts of projects, and feeding back monitoring results to managers so they can make needed adjustments, that adaptive management works. Monitoring and feedback of monitoring results to managers is critical to the success of land management projects. Also, in situations where impacts are uncertain, monitoring programs also allow identification of actual impacts that occur so they may be mitigated.

    The EPA particularly believes that water quality/aquatics monitoring is a necessary and crucial element in identifying and understanding aquatic impacts, and for determining effectiveness in BMPs in protecting water quality and beneficial uses. Although BMPs are designed to protect

water quality, they need to be monitored to verify their effectiveness. If found ineffective, the BMPs need to be revised, and impacts mitigated.

The DEIS indicates that a BMP review will be conducted for some thinning and broadcast burn units and some temporary road segments (page 2-19), and the soil protection BMP (Appendix B) indicates that soil productivity monitoring should be undertaken on all harvest units using ground-based systems.

We did not see any water quality or aquatic monitoring proposed in the Hyalite or Bozeman Creek watershed to document that water quality will not be degraded from logging and road building. Given the sensitive nature of the municipal watershed and the requirement that there be no change from naturally occurring turbidity and no increases above naturally occurring sediment concentrations in the A-1 and A-closed waters, we believe it would be prudent to carry out some level of water quality monitoring to validate that such requirements can be met. We would agree that monitoring would be most appropriate in drainages with road building and tractor logging, where it is more likely that potential water quality impacts may occur. We also encourage consultation and coordination with the Bozeman water utility district and Montana DEQ in regard to appropriate monitoring to document compliance with the water quality limitations of the A-1 and A-Closed classifications.

Examples of potential aquatic monitoring parameters that could be considered for Bozeman and Hyalite Creek watersheds include reservoir turbidity, suspended sediment, nitrates, phosphorus, etc., as well as channel cross-sections, bank stability, width/depth ratios, riffle stability index, pools, large woody debris, fine sediment, pebble counts, macroinvertebrates, etc.,. Monitoring of the aquatic biological community is often recommended since the aquatic community integrates the effects of pollutant stressors over time and, thus, provides a more holistic measure of impacts than grab samples.

EPA and that Montana DEQ use a suite of monitoring parameters to evaluate water quality for support of beneficial uses. For your information, reference materials that may be useful in designing an aquatic monitoring program include:

> The Forest Service publication, "Guide to Effective Monitoring of Aquatic and Riparian Resources," RMRS-GTR-121, available at, http://www.fs.fed.us/rm/pubs/rmrs_gtr121.html .
>
> The Forest Service publication, "Testing common stream sampling methods for broad-scale, long-term monitoring," RMRS-GTR-122, available at, http://www.fs.fed.us/rm/pubs/rmrs_gtr122.html .
>
> "Aquatic and Riparian Effectiveness Monitoring Plan for the Northwest Forest Plan," Gordon H. Reeves, David B. Hohler, David P. Larsen, David E. Busch, Kim Kratz, Keith Reynolds, Karl F. Stein, Thomas Atzet, Polly Hays, and Michael Tehan, February 2001. Available on-line at, www.reo.gov/monitoring/watershed/aremp-compile.htm .

Monitoring Guidelines to Evaluate Effects of Forestry Activities in the Pacific Northwest and Alaska; Lee H. McDonald, Alan W. Smart and Robert C. Wissmar; May 1991; EPA/910/9-91-001;

"Aquatic Habitat Indicators and Their Application to Water Quality Objectives Within the Clean Water Act," Stephen B. Bauer and Stephen C. Ralph, 1999, EPA-910-R99-014. (This publication is available on-line at, http://www.pocketwater.com/reports/ahi.pdf)

Western Pilot Study: Field Operations Manual for Wadeable Streams; Environmental Monitoring and Assessment Program Protocols, Edited by David V. Peck, James M. Lazorchak, and Donald J. Klemm, April 2001, available on-line at, http://www.epa.gov/emap/html/pubs/docs/groupdocs/surfwatr/field/ewwsm01.pdf .

Montana DEQ's Water Quality Monitoring and Assessment information can be found on the website, http://www.deq.state.mt.us/wqinfo/monitoring/Functions.asphttp://www.deq.state.mt.us/

Rapid Bioassessment Protocols for use in Streams and Rivers; James A. Plafkin, May 1989, EPA/444/4-89-001.

"Montana Stream Management Guide; for Landowners, Managers, and Stream Users", Montana Dept. Of Environmental Quality; December 1995.

The Forest Service Region 5 document entitled, "Water Quality Management for Forest System Lands in California: Best Management Practices," September 2000, is a useful reference for BMP development and BMP effectiveness monitoring. It can be found at the website, http://fsweb.r5.fs.fed.us/unit/ec/water/water-best-mgmt.pdf .

"Protocol for Developing Sediment TMDLs" EPA 841-B-99-004, October 1999 http://www.epa.gov/owow/tmdl/sediment/pdf/sediment.pdf

Air Quality

17. All action alternatives appear to include prescribed burning and pile burning. EPA supports judicious and well planned use of prescribed fire to reduce hazardous fuels and to restore fire to forest ecosystems. It is not entirely clear, however, how much pile burning will occur with the action alternatives. For example, the DEIS states in Chapter 2 that the preferred alternative will include mechanical cutting and piling of small trees on 1,200 acres and partial harvesting on about 3,700 acres, as well as 950 acres of prescribed burning. We presume the 950 acres of prescribed burning with the preferred alternative will be underburning or broadcast burning to reduce fuels, and that pile burning will occur on the 4,900 acres where there will be mechanical cutting of small trees and partial timber harvesting, but we did not see this clearly stated. We recommend that the FEIS more clearly describe and quantify proposed burning activities, particularly the amount of pile burning that would occur with the action alternatives.

18. As you know smoke from fire contains air pollutants, including tiny particulates (PM_{10} and $PM_{2.5}$) which can cause health problems, especially for people suffering from respiratory illnesses such as asthma or emphysema, or heart problems. Particulate concentrations that exceed health standards have been measured downwind from prescribed burns. In addition, prescribed fire could have impacts on Class II areas and Federally-designated Class I areas, and smoke can reduce visibility and diminish the appreciation of scenic vistas (Wilderness Areas or National Parks).

    Prescribed burning done in accordance with a certified State Smoke Management Plan such as the Montana/Idaho Smoke Management Plan is consistent with *EPA's Interim Air Quality Policy on Wildland and Prescribed Fire.* This is Federal policy which reconciles the competing needs to conduct prescribed fires to manage vegetation and restore fire to fire adapted ecosystems while at the same time maintaining clean air to protect public health. A copy of the *Interim Air Quality Policy* can be found at: http://www.epa.gov/ttn/oarpg/t1/memoranda/firefnl.pdf , and a fact sheet can be found at: www.epa.gov/ttn/oarpg/t1/fact_sheets/firefl.pdf . EPA air quality guidance can be found at www.epa.gov/ttn/oarpg/t1pgm.html . Smoke impacts from prescribed fire carried out during periods of favorable conditions for smoke dispersion are less hazardous than smoke impacts during a wildfire.

    We are pleased that burns would be coordinated with the Montana/Idaho State Airshed Group http://www.smoke.org (page 2-11). It is important to disclose that even though prescribed burns will be scheduled during periods of favorable meteorological conditions for smoke dispersal, the weather can change causing smoke not to disperse as intended. This can be especially problematic for smoldering pile burns when a period of poor ventilation follows a good ventilation day. Also, if there is potential for smoke to drift into populated areas there should be public notification prior to burns so sensitive people (e.g., people suffering from respiratory illnesses such as asthma or emphysema, or heart problems) can plan accordingly. We are pleased that the DEIS states that the public will be warned about high smoke concentrations during times of burning (page 2-11).

19. The air quality impact analysis and disclosure in the DEIS is generally very good, however, we note that data collected in Bozeman by Montana's ambient air monitoring program is shown that the Forest Service downloaded from EPA's AirData web site (2nd paragraph, page 3-231), and some of the data in the DEIS appears to differ from current AirData values. For example, the annual average PM10 concentrations measured at the City Building in Bozeman in 1998 and 1999 (21 and 19 micrograms per cubic meter respectively) seem to have been transposed. Also, although the MDEQ closed the air monitoring station at the City Building in the summer of 2002, the DEIS shows data from Bozeman through 2005. Please check the data and revise as necessary, and identify the air monitoring stations and program (if other than MDEQ) that reported the data.

20. We also recommend that efforts be made to educate home owners on the wildland-urban interface who build in fire adapted forest ecosystems regarding the need to use less flammable building materials and to manage fuel and vegetation near their homes (see websites www.firewise.org and www.firelab.org). General sound fire management practices include:

* Reducing the dangerous build-up of dead trees, branches, and vegetative matter on forest floors by using prescribed fire or the selective thinning, pruning, or cutting and removal of trees by mechanical means.

* Whenever possible, mechanical thinning can be used as an effective "pretreatment" to prescribed burning, although we also urge consideration of water quality, fishery, and ecological impacts along with air quality impacts when planning management actions (e.g., focusing mechanical treatments near roads to avoid or minimize new road construction). Mechanical treatments may be appropriate where the risk of the escape of prescribed burns is high and where nearby home developments may be threatened.

* Using smoke management techniques during burns to minimize smoke in populated areas as well as visibility effects. Each prescribed burn site will have unique characteristics, but smoke impacts can be minimized by burning during weather conditions with optimal humidity levels and wind conditions for the types of materials being burned. Smoke impacts can also be minimized by limiting the amount of materials and acreage burned at any one time. Careful scheduling of the many burning activities to coincide with proper climatological and meteorological conditions helps avoid air quality problems.

* Implementing fire hazard awareness and mitigation programs for the public. Closure of back country roads during high fire risk periods may reduce potential for human caused fires.

Fire, Fuels and Vegetation

21. Thank you for including discussion of fire and fuels and vegetation (Issue #01, pages 3-2 to 3-26) with information regarding fuel models, fire behavior, fire intensity, fire type, and the fire risks in the wildland urban interface (WUI). We are pleased that all the action alternatives would meet the Federal Wildland Fire Policy, and address purpose and need to varying degrees (page 3-22). Alternatives 3 and 5 appear to be most effective in reducing fire risks and severity (Tables 1-3 and 1-4), and Alternative 5 appears to be more effective at mitigating adverse impacts associated with proposed fuel treatments. As noted above, we support the need to reduce fire risks and severity within the Bozeman municipal watershed, and thus, concur with the Gallatin NF selection of Alternative 5 as the preferred alternative, since it appears to more effectively reduce fire risk and severity and also more effectively mitigate adverse effects of fuel treatments.

Forested Vegetation

22. It appears that old growth stands in the project area are relatively plentiful with 28 to 35% old growth in compartments 508, 509 and 510, well in excess of the Forest Plan Standard of 10% (page 3-177), and that even the most aggressive fuels reduction alternative (Alternative 3) would only reduce these percentages slightly (i.e., to 25% old growth in compartment 509). We are pleased that adequate old growth stands would remain following proposed fuel treatments.

23. It would be helpful if the FEIS identified the extent to which existing large diameter trees would be harvested and/or retained with the action alternatives Large diameter trees (e.g., over 15 inches in diameter) are generally long lived and more fire resistant, and provide important wildlife habitat. We support hazardous fuels reduction and treatments to reduce fire risk and improve vegetation resiliency, but generally recommend thinning from below treatments that retain larger healthy trees, particularly trees of desired and threatened tree species (e.g., whitebark pine). We note that harvest of large fire resistant trees could potentially increase fire risk by opening up the canopy and promoting more vigorous growth of underbrush and small diameter trees that would increase fuels and fire risk in subsequent years, contrary to the hazardous fuel and fire risk reduction purpose and need.

The alternatives descriptions in the DEIS do not describe measures that would be taken to retain large healthy trees, particularly trees of desired or threatened species such as whitebark pine during thinning and timber harvest treatments. We believe that whitebark pine trees should be retained as much as possible, and that the largest, best formed and least insect damaged trees be retained as much as possible. We support retention of many large diameter healthy trees, although we recognize that there may be site-specific circumstances that may require removal of individual large trees if they pose safety hazards or need to be removed for insect infestation or access (e.g., along a skid trail, although we believe skid trail layout should avoid such large at risk trees if possible).

Weeds

24. Thank you for including a section discussing the potential for noxious weeds to spread as a result of proposed logging, burning and road work (Chapter 3, Issue #12). Weeds are a great threat to biodiversity and can often out-compete native plants and produce a monoculture that has little or no plant species diversity or benefit to wildlife. Noxious weeds tend to gain a foothold where there is disturbance in the ecosystem, such as timber harvest, burning, and road construction. Roads and motorized travel, especially off-road vehicles, are a significant source of weed seed dispersion.

We are pleased to see preventative actions proposed to control weed spread identified in the DEIS (page 2-13). We support actions that control and limit the spread of weeds, and support the Gallatin National Forest's use of integrated weed management techniques as analyzed in the 2005 Noxious and Invasive Weed Treatment EIS for the control the spread of noxious weeds in the project area. EPA, however, does encourage prioritization of management techniques that focus on non-chemical treatments first, with reliance on chemicals being the last resort, since weed control chemicals can be toxic and have the potential to be transported to surface or ground water following application. Particular concern should be exercised in regard to use of potentially toxic chemicals for control of weeds within a municipal watershed.

Public health and water contamination concerns of herbicide usage should be fully evaluated and mitigated. Herbicide drift into streams and wetlands could adversely affect water quality and aquatic life and wetland functions such as food chain support and habitat for wetland species.

All efforts should be made to avoid movement or transport of herbicides into surface waters that could adversely affect public health, fisheries or other water uses. Picloram is a particularly toxic and persistant herbicide whose use within a municipal watershed should be carefully evaluated and monitored.

The National Primary Drinking Water Regulations (40 CFR Part 141.50, 141.61) identify allowable maximum contaminants levels for toxic organic chemicals, including some herbicides/pesticide in public water supplies. It is our understanding that weed control chemicals must be at non-detectable levels in A-Closed waters. Use of weed control chemicals in the Bozeman municipal watershed should be evaluated with the local water utility district and Montana DEQ.

It should also be noted that while Montana Water Quality Standards do not identify numerical criteria for aquatic life protection for many herbicides, it should be recognized that the research and data requirements necessary to establish numerical aquatic life water quality criteria are very rigorous, and many herbicides and weed control chemicals in use are toxic, although numerical aquatic life criteria have not been established. The Montana Water Quality Standards include a general narrative standard requiring surface waters to be free from substances that create concentrations which are toxic or harmful to aquatic life.

For your information, the website for EPA information regarding pesticides and herbicides is http://www.epa.gov/pesticides/index.htm . The National Pesticide Telecommunication Network (NPTN) website at http://npic.orst.edu/tech.htm which operates under a cooperative agreement with EPA and Oregon State University and has a wealth of information on toxicity, mobility, environmental fate on pesticides that may be helpful (phone number 800-858-7378).

We also note that prescribed fire has the potential to stimulate weed growth, and can destroy insects planted for biological weed control. However, burning followed by application of appropriate herbicides can provide effective weed control (although as noted above particular care should be exercised when using herbicides within a municipal watershed). We suggest that such considerations be evaluated during development of plans for prescribed burning. Areas should not be prescribed burned for at least 30 days after herbicide treatments.

Wildlife

25. We are concerned that proposed fuel reduction activities to be implemented with all the action alternatives would have potential adverse effects on habitat of wildlife, including the threatened Canada lynx . The DEIS reports that management direction in the Lynx Conservation Assessment and Strategy and Northern Rockies Lynx Management Direction would not be met with the proposed project (page 3-158), with preferred alternative resulting in 192 acres of additional unsuitable lynx habitat, and reductions in 1,666 acres in lynx denning habitat and 320 acres of lynx foraging habitat (Table 1, pages 3-158). However, we concur with the DEIS summary and conclusions (page 3-158), that indicate that protection of a major municipal water supply from adverse effects of a large scale wildfire, and protection of public and firefighter safety should be prioritized over the potential adverse effects to lynx habitat.

26. We are also concerned that all action alternatives include treatments that would disturb habitat of other wildlife species such as the northern goshawk (page 3-174), black-backed woodpecker (page 3-290), grizzly bear (page 3-302), gray wolf (page 3-307), bald eagle (page 3-312), migratory birds (page 3-320), wolverine and marten (page 3-334), elk and other big game (page 3-346) and other species (page 3-348). We are pleased, however, that design features and mitigation measures are proposed (pages 2-19 to 2-21) to reduce adverse effects to wildlife (e.g., protection for known occupied nest sites and timing restrictions for treatments could be implemented to minimize adverse effects to nesting birds, and that adequate nesting habitat would be retained).

    Also, as with impacts to lynx habitat, we believe that protection of a major municipal water supply from adverse effects of a large scale wildfire, and protection of public and firefighter safety should be prioritized.

Roadless

27. Alternatives 3 and 5 are stated to have the greatest effects on the apparent naturalness and natural integrity of the Gallatin Fringe roadless area due to proposed thinning timber harvest treatments in the roadless area (page 3-138). The DEIS, however, also states that if timber stands are not treated within the roadless area, potential effects of a catastrophic wildfire could severely affect the high quality drinking water sources for Bozeman. EPA generally supports protection of the natural integrity of roadless areas and other more pristine, undisturbed areas, since these areas have high quality watersheds as well as good wildlife habitat characteristics, wildlife security, wildlife movement corridors, and wildlife connectivity, and often provide population strongholds and key refugia for fish and wildlife, including threatened and endangered and sensitive species.

    However, we recognize the special circumstances which appear to exist in this situation with high fire risk in the municipal watershed for the City of Bozeman, and understand the implications of potentially severe adverse effects to the Bozeman water supply should a catastrophic wildfire occur. Accordingly, we support reduction of fuels and fire risk and severity within the Bozeman municipal watershed, even if fuel treatments may result in adverse effects to the apparent naturalness and natural integrity of the Gallatin Fringe roadless area.

    We are pleased that no roads are proposed within the roadless area, and that helicopter yarding will be used to reduce ground disturbances, and that only the minimum number of trees necessary will be removed to bring potential wildfire crowns to the ground (page 2-14). This should reduce adverse impacts to the roadless area.

Economics

28. We note that amount of timber harvest in the preferred alternative is stated in the narrative to be 17,351 ccf (page 3-228), whereas, the timber harvest volume in Table 1 (page 2-224) for Alternative 5 is shown to be 36,482 ccf. This discrepancy should be corrected in the FEIS.